

CLAIMS

1. A coffee making machine (10) which comprises:
 - a tank (34) for water,
 - a coffee dispensing unit (44),
 - 5 connection means which are interposed between the tank (34) and the dispensing unit (44) and which comprise, in the direction of flow of the water from the tank to the dispensing unit, a manual pumping unit (46) for conveying the water from the tank to the coffee dispensing unit and
 - 10 a heat exchanger (48).
2. A coffee making machine according to claim 1, wherein the heat exchanger (48) comprises a pipe (50) which is interposed between the manual pumping unit (46) and the dispensing unit (44), the pipe extending inside a
15 boiler (14).
3. A coffee making machine according to claim 2, wherein the pipe (50) comprises at least one portion which extends along a spiral-shaped course inside the boiler (14).
- 20 4. A coffee making machine according to claim 2 or 3, wherein the boiler (14) extends substantially vertically along a longitudinal axis (X-X) and wherein the manual pumping unit (46) and the dispensing unit (44) are arranged laterally on the boiler (14) relative to the
25 longitudinal axis (X-X).

5. A coffee making machine according to claim 4, wherein the manual pumping unit (46) is arranged above the dispensing unit (44) relative to a horizontal plane of support of the machine.

5 6. A coffee making machine according to claim 5, wherein the manual pumping unit (46) and the dispensing unit (44) define a single outer assembly which is arranged laterally on the boiler (14) relative to the longitudinal axis (X-X) thereof.

10 7. A coffee making machine according to claim 6, wherein the assembly which contains the manual pumping unit (46) and the dispensing unit (44) is arranged laterally on the boiler (14) by means of a casing (52) which contains connection elements (54, 56) between the 15 manual pumping unit (46) and the pipe (50) of the exchanger (48) and between the pipe of the exchanger and the dispensing unit (44).

8. A coffee making machine according to claim 7, wherein the connection elements (54, 56) between the 20 manual pumping unit and the pipe of the exchanger and between the pipe of the exchanger and the dispensing unit extend transversely to the longitudinal axis (X-X) of the boiler.

9. A coffee making machine according to claim 7 or 8, 25 wherein the casing (52) contains an additional connection

element (58) between the tank and the manual pumping unit.

10. A coffee making machine according to any one of claims 4 to 9, wherein the tank (34) is arranged above 5 the boiler (14) along the longitudinal axis (X-X).

11. A coffee making machine according to claim 10, wherein an upper portion (32) of the boiler (14) can receive and support a lower portion (36) of the tank (34).

10 12. A coffee making machine according to claim 11, wherein the upper portion (32) of the boiler (14) is a substantially concave portion which can receive the lower portion (36) of the tank (34) which has a substantially convex form.

15 13. A coffee making machine according to claim 11 or 12, wherein the upper portion (32) of the boiler (14) comprises a rapid connection (38) for an outlet pipe (40) for water from the tank (34), the rapid connection (38) being connected to the manual pumping unit (46).

20 14. A coffee making machine according to any one of claims 11 to 13, wherein the upper portion (32) of the boiler (14) comprises an access opening (26) to the boiler which is provided with a closure plug (28), and wherein the lower portion (36) of the tank is shaped to 25 receive the closure plug (28).

15. A coffee making machine according to any one of the preceding claims, wherein the manual pumping unit (46) comprises a cylinder (60) which accommodates a piston (62) which can be caused to move in translation along the 5 cylinder by means of a lever (64), and wherein the cylinder comprises an inlet (68) which is placed in communication with the tank (34) and an outlet (70) which is placed in communication with the exchanger (48).

16. A coffee making machine according to claim 15, 10 wherein a non-return valve (72) is arranged between the tank (34) and the inlet (68) of the cylinder (60) and a non-return valve (74) is arranged between the outlet (70) of the cylinder (60) and the exchanger (48), the non-return valves being able to allow the passage of water in 15 the direction from the tank to the cylinder and to the exchanger.

17. A coffee making machine according to claim 15 or 16, wherein the piston (62) is suitable for dividing the cylinder (60) into a first chamber (76), in communication 20 with the inlet (68), and a second chamber (78), in communication with the outlet (70), the piston comprising a duct (80) which is suitable for placing the first chamber and second chamber in communication.

18. A coffee making machine according to claim 17, 25 wherein a non-return valve (82) is arranged inside the

duct (80) of the piston (62) and can allow the passage of water in the direction from the first chamber to the second chamber.

19. A coffee making machine according to any one of the 5 preceding claims, wherein the tank (34) can contain water which is substantially at ambient temperature.

20. A coffee making machine according to any one of the preceding claims, wherein the dispensing unit comprises a water distribution portion (84) which is provided with a 10 dispensing surface (90) which can face a layer of coffee, the distribution portion comprising a distribution pipe (92) in order to convey water to at least one opening (94) of the dispensing surface (90).

21. A coffee making machine according to claim 20, 15 wherein a connection element (56) is provided substantially parallel with the dispensing surface (90), which connection element (56) is interposed between the exchanger (48) and the distribution pipe (92).

22. A coffee making machine according to claim 21, 20 wherein the connection element (56) is engaged in the dispensing unit.